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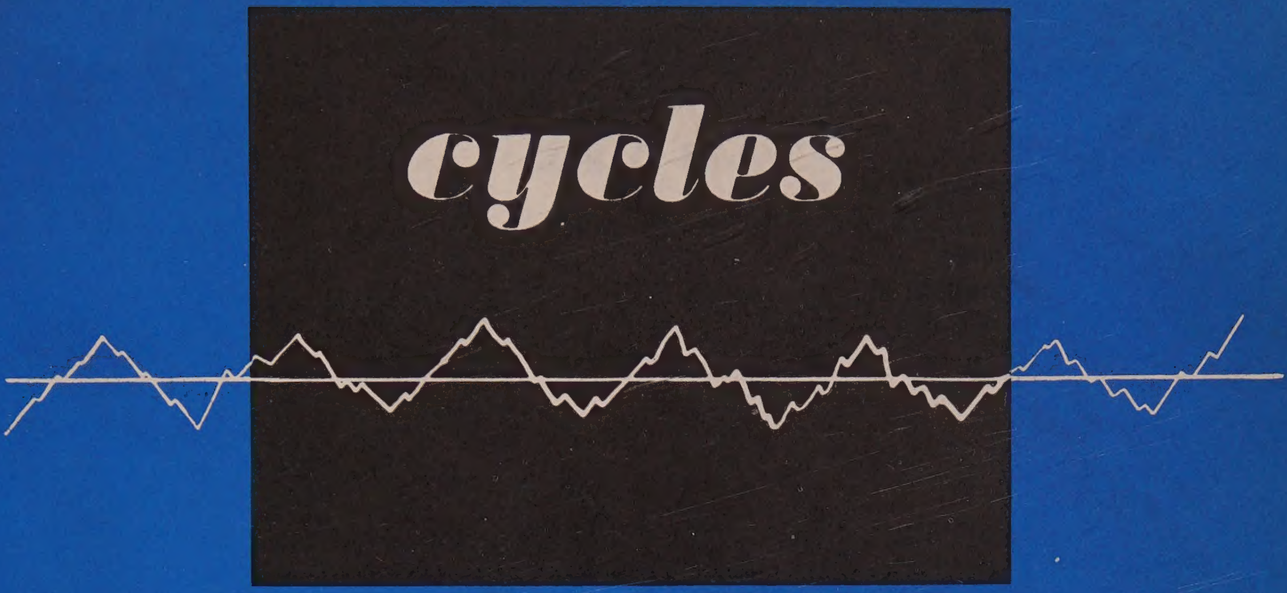

February 1959

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THE OFFICIAL BULLETIN OF THE FOUNDATION FOR THE STUDY OF CYCLES

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INDEX

BY DEPARTMENT

Page

Chapter Affairs 41
  Kansas City, San Francisco, Washington, D. C. and New York

Cycle Round-Up for February . . 42
  Round-up has special review of:
    Bond Yields 44
    Unemployment 45
    Wheat Prices 43
  Round-up gives latest figures on:
    Aluminum Production
    Automobile Factory Sales
    Copper Prices
    Corn Prices
    Liabilities of Failures
    Oats Prices
    Residential Building Construction
    Stock Prices
    Sunspot Numbers

Director's Letter 27

Geisinger Indicator 46

Letters 40

Research By Staff
  The 5.91-Year Cycle in Cotton Prices . . 29
  The 18 1/3-Year Cycle in Real Estate Activity . . . 31
  The 7 1/2-Year Cycle in C. P. R. Ton Miles . . . 32
  The 17 3/4-Year Complex . . . 34

Research By Others
  Rainfall at Santa Barbara . . 36

BY SUBJECT

Business
  Aluminum Production . . . 42
  Automobile Factory Sales . . 42
  C. P. R. Ton Miles . . . 32
  Industrial Production . . . 46
  Real Estate Activity . . . 31
  Residential Building Construction 42
  Unemployment 45

Commodity Prices
  Copper Prices 42
  Corn Prices 42
  Cotton Prices 29
  Oats Prices 42
  Wheat Prices 43

Finance
  Bond Yields 44
  Liabilities of Failures . 42
  Stock Prices . . . 40, 42

General
  The 17 3/4-Year Complex . 34

Natural Science
  Rainfall at Santa Barbara 36
  Sunspot Numbers 42

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Director's Letter

Dear Member:

It has been said that the mark of an educated man is his resistance to new ideas. This characterization is not made disparagingly. The educated man knows so much that he knows why a new idea won't work. You would not hear him say "Why don't they try it," or "Why don't they do it this way." These questions are usually asked by people who would not ask them if they knew more.

Educated People Sometimes Know Too Much

But sometimes educated people know too much. I recall a story from World War I. The German blimps were striking terror in the hearts of the people in London, (I knew an English girl who, years after, would cringe when she heard an airplane motor overhead.) The British did not seem to be able to shoot the blimps down. The bullets went right through them.

One day an old man came to the war office and said he had the answer: Put some dynamite on the nose of a bullet and that would fire the silk cover of the balloon.

Of course no one would pay any attention to him. Everyone knew that dynamite is relatively nonexplosive. It was unthinkable that it would explode upon contact with silk. But the old man persisted. Finally, to get rid of him, one of the experts went with the old man to his back yard. The test was made. A bullet with dynamite on it fired through a piece of silk *did* set the silk on fire.

The answer turned out to be that dynamite is nitro-glycerine and a filler. In the process of being fired, the filler fell back and left a few drops of pure nitro-glycerine way up front. When this hit the taut silk it exploded. The problem was solved—in spite of the educated men at the war office: In this case they knew *too* much.

Nelson's Forecast of Radio Weather is "Impossible"

Something of the sort may be so in respect to Nelson's work in forecasting radio weather. As with the old man and his dynamite, Nelson's work just can't be so. The angular relationships among the planets just *can't* affect changes in radio propagation quality, according to present day scientific knowledge (and yet they do, or at least they correspond in timing). Moreover, even if the planets could have an effect, the effect, whether gravitational, electrical, or magnetic, would have to vary inversely as the square of the distance and directly as the mass. A small, far away planet like Pluto should have very little or no effect at all.

But Nelson finds no detectable difference in the effect, *regardless of size of the planet or its distance*. Therefore, to the learned scientist, Nelson's work just can't be so. But Nelson keeps plugging along, regardless of the impossibilities, making predictions that are now over 90% accurate, all based on his empirical observations of cycles and angular planetary relationships.

Is there something in the universe as yet unknown to science, that operates irrespective of distance? It's hard to believe.

Yet, if there is something of the sort, it just might happen to operate outside the solar system, too. What, outside the solar system pulsates in rhythmic cycles? Why, variable stars, of course.

Could variable stars cause, or be associated with, terrestrial cycles? This is science fiction with a vengeance! Still, it won't hurt to look, will it?

It is easy to get a catalog of variable stars i.e., stars that vary in brightness. There are about 11,000 such stars listed, varying in brightness in cycles which range in period (wave length) from about 2 hours to about 80 years. Most of these cycles are short—in fact only thirty-one of the 11,000 are longer than 2 years.

To start my investigation I copied out of my variable star catalog the lengths of all 31 of these longer periods. As all these lengths are given in days they meant very little to me. I therefore divided them by 365.24 to get the length in years. Quite by accident the very first daily period I divided (6475 days) turned out to be 17.728 years long. Now this is the exact length (within necessary tolerances) of one of our best substantiated terrestrial cycles! (The average length of this cycle on earth as measured in nine phenomena is 17.724 years.) Speaking roughly, we call this cycle 17 3/4 or 17.75 years long.

The 17.75-Year Cycle is Present in Many Things

Cycles for April 1955 devoted the greater part of the issue to a discussion of this cycle. In brief, wherever found, the length agreed within 2/3 of 1% and the crests all came within a quarter of a cycle (4½ years) of typical timing.

When you have all these different phenomena having cycles of the same wave length coming at about the same calendar time, it adds creditability to the cycle. That is, the behavior can't reasonably be the result of chance. This is especially true when, as in this instance, you have cycles of seemingly the same length present in both natural and social science behavior. How could this be so except as the result of some more fundamental causative factor?

Double and Triple Progression

There is one more thing that I must tell you about the 17.75-year cycle before we get back to our variable stars. That is, that this cycle seems to be one of a *family* of cycles. The members of this family are related to each other by double and triple progression. That is, starting let us say with 17.75 years as base, you will find another cycle about twice 17.75 years (35.5 years) and still another three times 17.75 years (53.25 years), and others twice and three times each of these lengths, and so on indefinitely. The sequence goes the other way too. We have cycles one-half of 17.75 and one-third of 17.75, and then 1/2 and 1/3 of the half, 1/2 and 1/3 of the third, and so on indefinitely.

It would be hard to have what seems to be the same wave length occuring in many different natural and social science figures purely as a result of chance. It would be harder still to find all these other cycles of related lengths just by chance. And with only 31 known variable stars with wave lengths between 2 and 80 years it would be hard to find, by chance alone, one star that corresponded *exactly* to the observed wave length here on earth unless we were dealing with something in some way interrelated. And yet stranger things than that have happened merely by accident.

Believe It Or Not

For example, my wife has a friend named Dorothy Y. Wilson—a school teacher of Washington D. C. On her retirement a few months ago Miss Wilson got a letter from a friend of hers named Mary Jane McDonald asking if she had received a check that Miss McDonald had sent to celebrate the occasion. Miss Wilson wrote back that she had not. Miss McDonald therefore sent her another gift instead.

But the check showed up, endorsed in a strange handwriting. Miss McDonald sent it to Miss Wilson with a note to say that she remembered now that she had sent it to 4700 Wisconsin Avenue instead of 2700 Wisconsin Avenue, and to notify the police. Miss Wilson did.

In a few days the detective assigned to the case returned with an amazing tale. There *was* another Dorothy *Y.* Wilson, and to cap it, Dorothy *Young* Wilson, which was my wife's friend's full name! The other Dorothy Young Wilson had an aunt Mary Jane McDonald (a different Mary Jane McDonald) to whom she had written that she was going to get married. So of course when the check came from a Mary Jane McDonald, with a note saying "A Happy Future to you," she thought it was a wedding present from her aunt. All this the detective had verified by social security cards, copies of letters, etc.

Now when coincidences of this sort are possible—as they are—we must not go overboard when we find one of 31 variable stars with a wave length exactly like one of the many known terrestrial wave lengths.

More Trouble

What about the other 30 variable stars? Some of them correspond, but many well known earthly cycles between 2 and 80 years in length have no counterpart among the 32 variable stars within this range. Does this dash our hopes of association? Not entirely. It is conceivable that the variable star lengths that are recorded belong, on their part, to *families* of wave lengths. For example we have no variable star with a wave-length of 8 years, but we do have a length of 2.004 years, and 2.004 x 2 x 2 = 8.016.

On the other hand, if this is the answer, there would be no obvious reason why all the building blocks on which these systems are based should be over 2 years long. We could go down to one year—or six months. If we did this we would have so many lengths that, by double and triple progression you could get lengths to match anything! I imagine this dashes our hopes for progress in this direction, but it is intriguing, isn't it, that these correspondences exist? Some of them surely mean more than just having fun with figures. But which ones!

More Research

A number of years ago the president of a large lead company told me that his ambition in life was to run a hardware store in some little town in Vermont where there was no possibility of *growth*. "All my life," he said, "I've been trying to make things bigger. Now for a change I'd like to be engaged in something that just *couldn't* be bigger."

I feel a little the same way myself. We are now so big that our expenditures exceed $400 each and every working day! My time is largely taken up with administrative matters. I have but little time for research.

Now I don't mind administrative work. In fact I like it. But if I am to do work of this kind I might as well hire out at $15,000 a year (which is my earning power) instead of working for nothing! Wouldn't you say so too?

Therefore we are going to try to get along without doing any "promoting" in 1959. That is, we are not going to send out any letters to the general public inviting them to join the Foundation (except enough to keep our expire list clean). We are going to try to keep the members we have, and to get by with their dues and their contributions. This will lessen my administrative load and enable me to spend more time learning about cycles for you.

Ever cordially yours,

Edward R. Dewey

Director

Research by Staff

THE 5.91-YEAR CYCLE IN COTTON PRICES

BY GERTRUDE SHIRK

The chart below compares a free-style drawing of the ideal 5.91-year cycle in cotton prices with the record of actual cotton prices. As you can see, the exceedingly narrow range within which cotton prices have been fluctuating has, for the present, reduced the similarity between the two lines.

For the past six years cotton prices have moved sideways, and in 1958 (through October) the range was only four-tenths of one cent.

That this price behavior is unusual is apparent when you consider that the 5.91-year cycle has been present in cotton prices since 1731—as far back as the figures go. In the past, even when there was a divergence between the prices and the cycle, at least the prices were moving up or down.

It is beyond our scope of operation, but it is a fair assumption that the current stability of cotton prices in the result of governmental action.

There are two comparisons we can make to reach some conclusion about the validity of this cycle. First, there is the record of buying and selling—long and short, based on the turning points of the cycle and using the actual price of cotton. Since 1731 there would have been 71 transactions, of which 16 would have shown a loss. Obviously, the current long position will show a loss, which will make 17 losses in 72 transactions.

Despite the current loss, therefore, actual cotton prices have moved with the 5.91-year cycle 76% of the time since 1731.

The second comparison we can make is between the ideal cycle and the actual cycle—the figures from which the average 5.91-year behavior was derived. This comparison is made on Figure 2 on the next page. The chart gives the complete record of the behavior of the cycle and lends support to the conclusion that, despite the current divergence, the cycle will get back on the track when prices are again permitted to fluctuate freely.

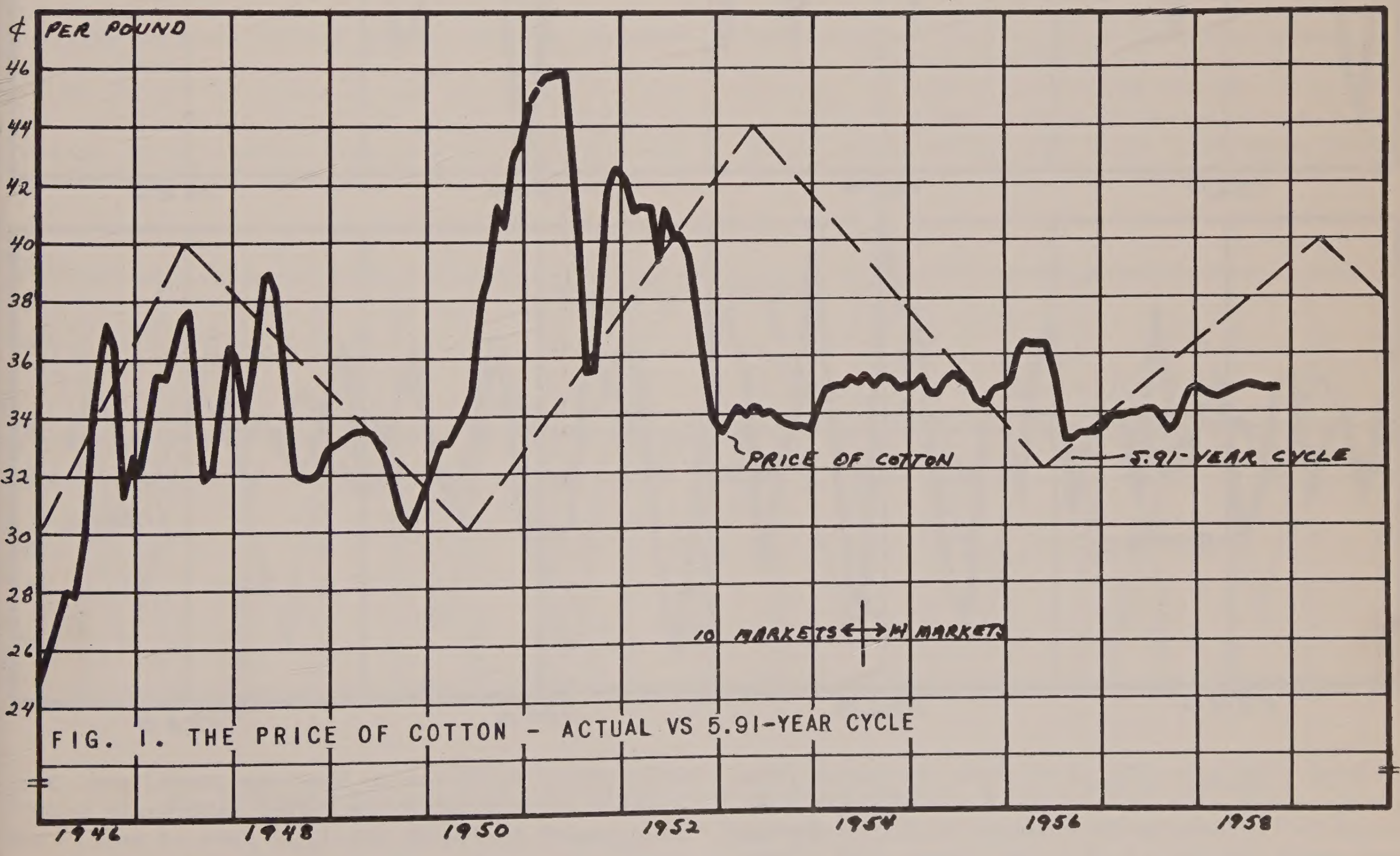
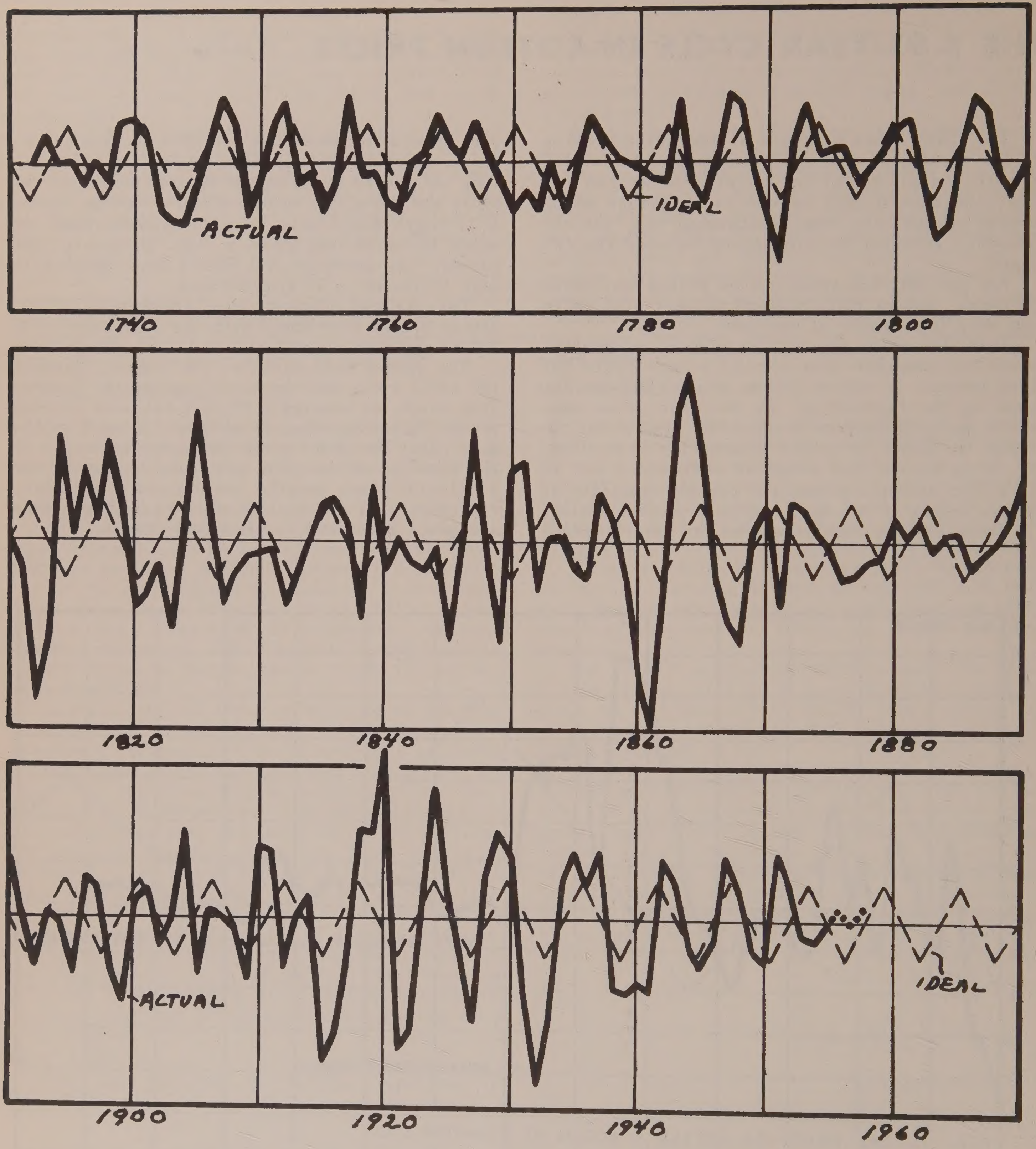


FIG. 1. THE PRICE OF COTTON - ACTUAL VS 5.91-YEAR CYCLE

Fig. 2. Actual cotton prices, 1731-1958, expressed as percentages above and below trend, together with a perfectly regular 5.91-year cycle.



From crop year 1731-2 to date the gains from purchase and sale of cotton on a 5.91-year time schedule (refraining from short positions during war) would have been 1,631%. the losses 209%. Since 1952 the price of cotton has been stabilized, presumably by government controls. This cycle cannot be expected to resume until the laws of supply and demand are again permitted to operate.

THE 18 1/3-YEAR CYCLE IN REAL ESTATE ACTIVITY

BY G. SHIRK

Real estate activity in the United States has fluctuated since 1795 in a very regular cycle slightly over 18 years long. Whether the real estate people realized it or not, this cycle has been the basic fact of life in the real estate business.

The chart below shows an ideal 18 1/3-year cycle by means of a broken line and compares it to the actual Index of Real Estate Activity. The Index is expressed as a per cent of normal; that is, the "normal" level of real estate activity is a horizontal line at 100 and the fluctuations are above and below this line.

This information is from Roy Wenzlick & Company, who publish it regularly in *The Real Estate Trends*.

Real estate activity is defined as the number of voluntary transfers of real estate in relation to the number of families in urban areas.

The 18 1/3-year cycle appears clearly over the entire record of real estate activity.

The actual 1946 peak came two years later than the ideal peak. (The ideal peak is simply the average behavior.) After 1946, activity slumped to what may be a very high bottom. The next ideal peak is at 1962.5, and if past behavior is a guide, real estate activity should go upward for the next four years.

Despite the fact that the actual line after 1946 did not go as low as previous lows, it cannot be denied that the period after 1946 is one of relative weakness in real estate activity, as shown by the chart.

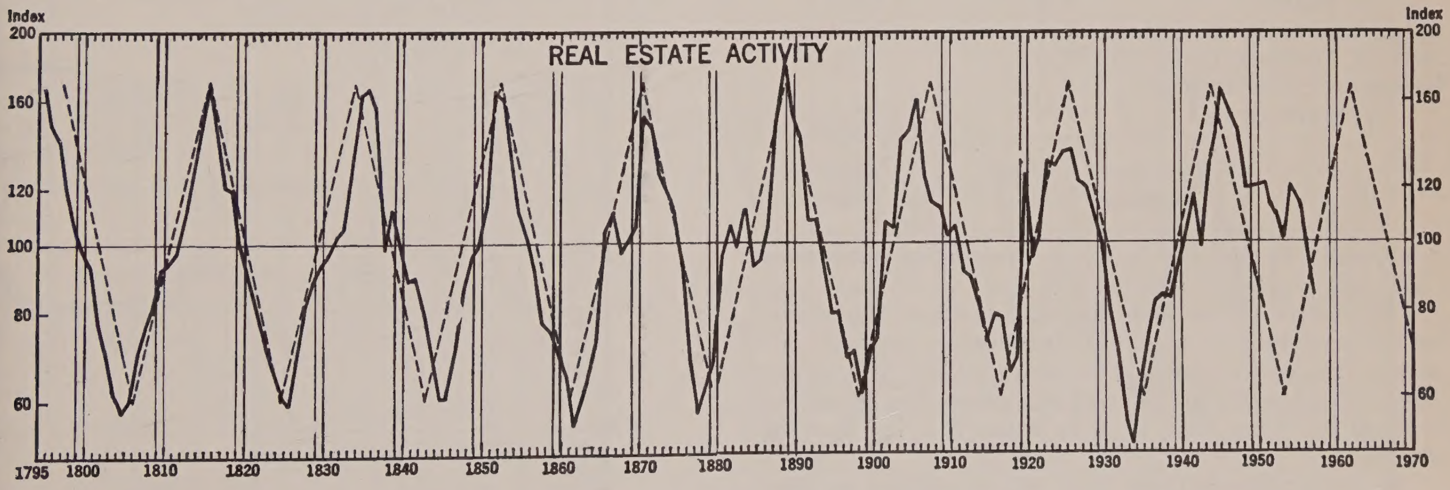
It should be pointed out that because the determination of normal is partly a matter of opinion the relatively high area of the low period we are passing through may be the result of using a "normal" line that is too low. If the "normal" line is assumed to be higher than the one used, then the actual line will be a greater distance below it, and the percentage of normal, as shown on this chart, would be correspondingly lower.

At any rate, the next benchmark in this study is the high that is indicated for 1962. The next year or so should reveal whether or not the 18 1/3-year cycle in real estate activity is currently dominant enough to raise the line toward the high scheduled for 1962. If so, the current dip may very well be the low of the cycle. If not, we may assume that the 18 1/3-year cycle is currently not operative.

You will observe that in each of the last five cycles, on the way up from the bottom to the following top, there appeared a correction, or pause, in the climb. The current dip comes at about the time in the cycle when these hesitations have generally occurred in the past. The 1958 low may therefore be a hesitation in the climb that has gone deep enough to make a new low.

Since 1795 this cycle has been a fundamental factor in the real estate business. It could be called *the* fundamental factor and the question of whether it is still operative is *the* fundamental question in real estate.

From 1795 through 1946 there were eight repetitions of the 18 1/3-year cycle. The experience covers a time span of 150 years. The waves are too clear and regular to be denied or ignored by anyone concerned with real estate activity. However, in view of the current picture, this cycle in these figures should be reviewed yearly and should not be relied upon until it is again clearly on the track.



Real Estate Activity in the United States Expressed as a Per Cent of Normal vs. the Ideal 18 1/3-Year Cycle. Data are for January of each year.

THE 7 1/2-YEAR CYCLE IN THE TON MILES OF THE CANADIAN PACIFIC RAILWAY

BY EDWARD R. DEWEY

A 7½-year cycle in the ton miles of the Canadian Pacific Railway from 1884 through 1941 was discovered in 1942 by G. Meredith Rountree, now General Auditor of the system.

A recent examination of the figures 1942-1958 shows that this cycle has continued from 1941 to date. The continuation may of course be accidental. The first wave may have been the result of the war, the second mere happenstance. It will take a number of additional waves before we can be sure that this behavior has significance.

The Chart

The accompanying chart shows (A) actual annual ton miles, 1885-1957 ex World War I values (not presently available), (B) a 9-year moving average trend, (C) deviations from the trend and (D) a perfectly regular 7½-year periodicity.

Other 7½-Year Cycles

In passing it is interesting to note other places in which a cycle of about this length has been discovered, and the closeness to which the turning points come to typical timing.

Various 7.5- Year Cycles

Series	Length	Date of Crest
European Wheat Prices	7.42	N.A.
Pig Iron Prices, U.S.A.	7.4 & 7.6	N.A.
Lynx, Canada	7.46	*1952.4
Climate	7.47	N.A.
European Weather	7.50 & 7.67	N.A.
Wheat Prices, U.S.A.	7.50	1950.3
Sales of a Public Utility	7.5	1952.6
C.P.A. Revenue Freight Ton Miles	7.5	*1952.1
Solar Constant, reversed	7.6	1952.4
Sunspot Numbers, reversed	7.6	1951.0
Barometric Pressure at New York City	7.6	1951.0
average	7.52	1951.7
median	7.50	1952.1

* adjusted to 40° L N.A. = Not available

The table gives the suggestion that there may be two cycles of closely related wave length; one about 7.4 years long, the other about 7.6 years long. The length of 7.5 years, where found may be a blend of these two. This is a subject for further study.

It is hard to believe that we could have so many instances of the 7½-year pattern, with turning points coming so close to average timing, merely as the result of chances. This fact supports the idea that the 7½-year cycle in the ton-miles of the C.P.R. is a valid and significant behavior pattern

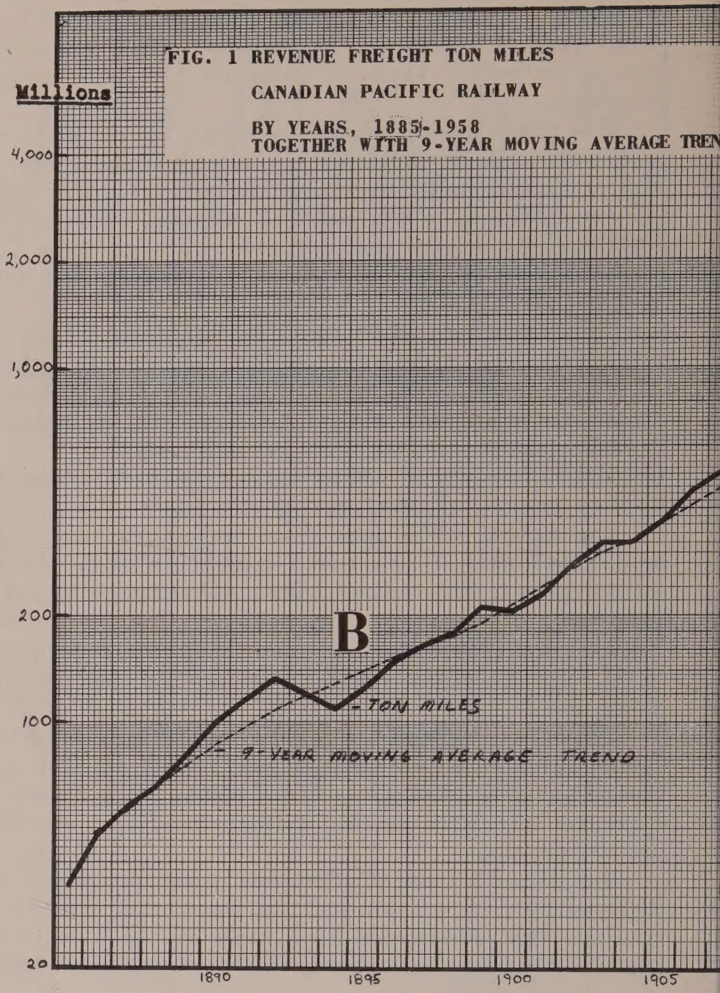


FIG. 1 REVENUE FREIGHT TON MILES
CANADIAN PACIFIC RAILWAY
BY YEARS, 1885-1958
TOGETHER WITH 9-YEAR MOVING AVERAGE TREN

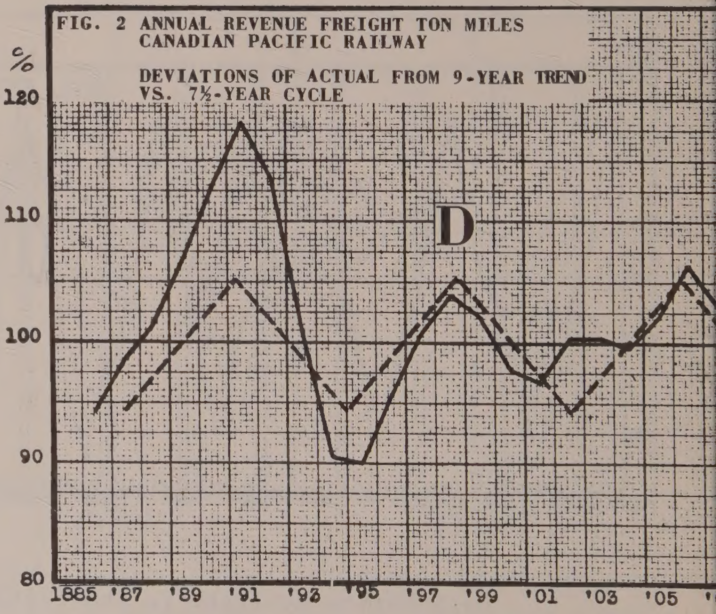
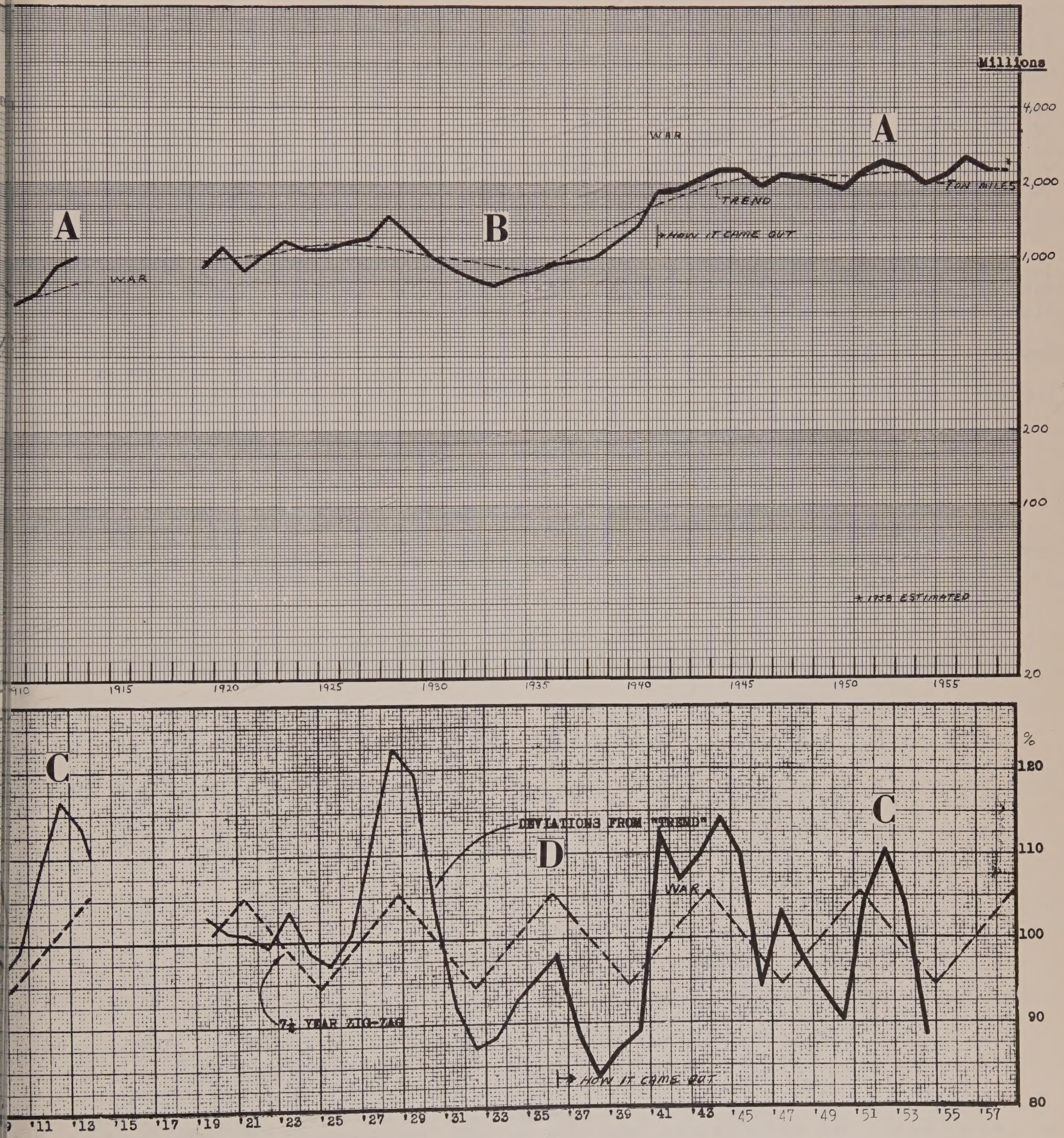


FIG. 2 ANNUAL REVENUE FREIGHT TON MILES
CANADIAN PACIFIC RAILWAY
DEVIATIONS OF ACTUAL FROM 9-YEAR TREND
VS. 7½-YEAR CYCLE


Millions
4,000
2,000
1,000
200
100
20
A
A
B
C
C
D
WAR
WAR
WAR
TREND
TON MILES
HOW IT CAME OUT
* 1958 ESTIMATED
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
%
120
110
100
90
80
DEVIATIONS FROM "TREND"
7½ YEAR ZIG-ZAG
HOW IT CAME OUT
'11
'13
'15
'17
'19
'21
'23
'25
'27
'29
'31
'33
'35
'37
'39
'41
'43
'45
'47
'49
'51
'53
'55
'57

THE 17 3/4-YEAR COMPLEX

BY EDWARD R. DEWEY

I wish to use the well-established 17 3/4-year cycle as an example of a cycle that seems to be one of a family of cycles—that is, a group or collection of cycles whose wave lengths are related to each other in some consistent and simple manner.

The 17 3/4-year cycle was first discovered in 1942 when I was making a multiple harmonic analysis of cotton prices. I next came across it in 1949 in Arizona tree ring widths when I was trying to find an 18 1/3-year cycle in these figures. The 18 1/3-year cycle was not present, but a 17 3/4-year cycle was. Since then I have found it in numerous phenomena. The complete list follows:

Industrial stock prices, 1871-1950	17.78 years
Sales of a large mail order house	17.75
Liabilities of Commercial and Industrial Failures, 1857-1954	17.75
Sunspots with Alternate Cycles Reversed, 1749-1954	17.66
Pig Iron Prices, 1784-1954	17.69
Cotton Prices, 1731-2—1953-54	17.75
Civil War & International War Battles Combined, 599 B.C.—A.D. 1950	17.73
Number of Earthquakes in China, A.D. 54-1651	17.66
Tree Rings in Arizona, A.D. 931-1939	17.75
Variable star, Scorpius V 381	17.728
Average of nine lengths	17.724

In the 17 3/4-year complex the waves are related by double and triple progression. That is, we find cycles twice and three times the base length of 17 3/4, and twice and three times these lengths indefinitely; one-half and one-third 17.75, and one-half and one-third these lengths, and so on indefinitely.

Table 1 shows the various lengths you would get by double and triple progression. Bold face type shows discovered cycles; light face not yet observed.

Table 2 shows the various cycles which have been discovered where the wave lengths more or less correspond to the lengths given in Table I.

TABLE 1

MULTIPLES AND FRACTIONS OF 17.75 YEARS

USING DOUBLE AND TRIPLE PROGRESSION

142.0 yr. (BASE x 2 x 2 x 2)
213.9 yr. (BASE x 2 x 2 x 3)
319.5 yr (BASE x 2 x 3 x 3)
479.3 yr (BASE x 3 x 3 x 3)

71.0 yr. (BASE x 2 x 2)
106.5 yr. (BASE x 2 x 3)
159.8 yr. (BASE x 3 x 3)

35.5 yr. (BASE x 2)
53.3 yr. (BASE x 3)

17.75 yr. (BASE)

5.92 yr. (BASE ÷ 3)
8.88 yr. (BASE ÷ 2)

1.97 yr. (BASE ÷ 3 ÷ 3)
2.96 yr. (BASE ÷ 3 ÷ 2)
4.44 yr. (BASE ÷ 2 ÷ 2)

.66 yr. (BASE ÷ 3 ÷ 3 ÷ 3)
.99 yr. (BASE ÷ 2 ÷ 3 ÷ 3)
1.48 yr. (BASE ÷ 3 ÷ 2 ÷ 2)
2 22 yr. (BASE ÷ 2 ÷ 2 ÷ 2)

.22 yr. (BASE ÷ 3 ÷ 3 ÷ 3 ÷ 3)
.33 yr. (BASE ÷ 2 ÷ 3 ÷ 3 ÷ 3)
.49 yr. (BASE ÷ 3 ÷ 3 ÷ 2 ÷ 2)
.74 yr. (BASE ÷ 3 ÷ 2 ÷ 2 ÷ 2)
1.11 yr. (BASE ÷ 2 ÷ 2 ÷ 2 ÷ 2)

TABLE 2

THEORETICAL CYCLE LENGTHS

(Double and triple progression up and down using 17.75 as a base.)

AND OBSERVED CYCLES WHICH MORE OR LESS CORRESPOND

Theoretical Cycle	Found in---	Observed Length
479.3 yrs.	Not yet found	
319.5	Not yet found	
213.0	Not yet found	
159.8	Pig Iron Prices	159 yrs
106.5	Women's Fashions	105
142.0	Number of International Battles	142
71.0	Not yet found	
53.3	Arizona Tree Rings	54
	Prices, U.S.A.	54
	Prices, Germany	54
	Prices, Great Britain	54
	Coal Consumption, France	54
	Coal Production, England	54
	Lead Production, England	54
	Number of Textile Workers, England	54
	Wages of Agricultural Workers, England	54
	Value of French Rente	54
	Value of English Consols	54
	Pig Iron Production, England	54
	Copper Prices, U.S.A.	54
	Cotton Acreage, U.S.A.	54
	Deposits in Savings Banks	54
	Foreign Trade (Imports & Exports)	54
	Interest Rates, U.S.A.	54
	Oat Acreage, U.S.A.	54
	Ship Building, U.S.A.	54
	Devaluation in England	54
	British Wheat Prices	54.0
	Railroad Stock Prices, U.S.A.	54.6
35.5	Abundance of Lynx in Canada	35.2
	Frequency of Aurora	35.9
	Frequency of Earthquakes in China	35.2
	European Weather	35.5
	Barometric Pressure of Batavia	36
	Manufacturing Production, U.S.A.	36
	Wheat Prices in Western Europe	36
	Immigration into U.S.A.	35
	Plant and Tree Growth in England	35
	Thickness and Thinness of Tree Rings in England	35
	Harvests in Europe	35
	Value of English Consols	36
17.75	Industrial Stocks	17.78
	A large mail-order house	17.75
	Failures	17.75
	Sunspots, alternate cycles reversed	17.66
	Pig Iron Prices	17.69
	Cotton Prices	17.75
	War	17.73
	Earthquakes	17.66
	Tree Rings, Arizona	17.75
	Variable Star, Scorpius V 381	17.724
8.875	Pig Iron Prices	8.9
	Widths of pre-glacial tree rings	8.85
	Sunspots - Lane	8.76
	Sunspots - Stumpff	8.8
	Sunspots - Clayton	8.94

Theoretical Cycle	Found in---	Observed Length
5.916 yrs.	Cotton Prices	5.91 yrs.
	Pig Iron Prices	5.91
	Copper Prices	5.91
	Sunspots with alternate cycles reversed	5.91
	Tree Ring Widths	5.91
	Railroad Stock Prices	5.9
	Industrial Stock Prices	5.93
	Dozens of other series of figures	6.
	Wheat Prices in Western Europe	5.96
	Liabilities of Failures	5.90
	One half of the time it takes the planet Jupiter to go around the sun	5.931
	One fifth of the time it takes the planet Saturn to go around the sun	5.892
	One forty-second of the time it takes the planet Pluto to go around the sun	5.915
4.438	Sales of Company G	4.37
	Industrial Common Stock Prices	4.4
	Railroad Stock Prices	4.4
	Pig Iron Prices	4.44
	Advertising Effectiveness of Pinkham Medicine Company	4.41
	European Wheat Prices	4.41
	Temperature	4.41
Months		Months
35.5 mo.	Factory Sales of Passenger Autos	36.0 mo.
	Common Stock Prices	35.6
	Common Stock Prices	36.2
26.63	Not yet found	
23.6	Factory Sales of Automobiles	23.6
	Industrial Stock Prices	23.7
17.75	Industrial Stock Prices	17.8
13.31	Industrial Stock Prices	13.3
11.83	Industrial Stock Prices	11.9
8.88	Sales of Company G	8.8
	Bank Debits	9.
7.89	Sales of Company G	7.92
5.92	Electric Potential of Trees	6.
	Industrial Stock Prices	5.9
3.94	Electric Potential of Trees	4.
	Sales of Company G	4.05
	Industrial Stock Prices	3.937
2.63	Not yet found	

CYCLE FORECASTS OF SANTA BARBARA RAINFALL

BY GEROULD T. LANE

Cycles prove to be of use in forecasting rainfall at Santa Barbara, California.

The average rainfall at Santa Barbara for the past 90 years is 17.9 inches a season. A season runs from July of one year through June of the following year. Our driest season was 1876-77 with a rainfall of 4.49 inches. Our wettest, the season of 1940-41 with 45.21 inches.

Back in 1955 I made a cycle analysis of Santa Barbara rainfall for the seasons 1867-77 through 1954-55. The results of this analysis were published in *Cycles* for January 1956. The analysis disclosed several cycles as shown on the charts which follow.

The Record

Projecting these cycles forward enabled me to say, in the article named above, "on the average there will be much greater rainfall during the next ten years." At the time I did not venture a more precise forecast.

So far this forecast has turned out to be correct. Rainfall for the three seasons since this forecast was made has averaged 21.84 inches. This figure is 22% above normal.

Last year I got a little more ambitious. I forecast rainfall of 34.50 inches for the season 1957-58. The actual was 31.94 inches. My forecast was correct within 8%. If my mathematics are correct I could not have come as close by chance alone more than once in 18 trys.

The Forecast for 1958-59

My forecast for the season 1958-59 is 15.50 inches. Come July of 1959 we will know how this forecast comes out.

Later on in this story I want to tell you just how I made these forecasts, but right now I want to tell you about the original work. It is illustrated by the charts on the next three pages.

The Cycles

As you can see from the charts, I isolated the following cycles:

(a) A 52-year cycle that seems to be repeating. This cycle is shown by Chart 5, Curve M.

(b) A 26-year cycle that may be caused by the joint action of the 5.2-year cycle and the 1-year or seasonal cycle. Three repetitions of this cycle are shown in Chart 5, Curve J.

(c) A 16-year cycle. Five repetitions of this cycle are shown in Chart 5 by Curve L.

(d) A 5.2-year cycle. Thirteen repetitions of this cycle are shown in Chart 3 Curve F.

(e) A 3-year cycle. It is shown in Curve H of Chart 4.

(f) A 2-year cycle. This cycle reverses. It is shown in Curve I of Chart 4.

In 1956 I refined the length of the quarter century cycle from 26 to 25 years and broke the 5.2-year cycle into two cycles 4- and 6-years long respectively. I no longer bother specifically with the 16-year cycle in making forecasts.

Techniques

My methods are based on the fact that there are 2, 3, 4 and 6 season cycles in Santa Barbara rainfall as well as a 25 season cycle. Therefore, a six season moving average of a four season moving average removes the shorter cycles and leaves a series of 25 year waves, measuring from low to low.

I then get the average of the three 25-year waves.

I then see how clearly the actual moving averages are following the average of the three 25-year waves. From this comparison I project the moving average one year.

I then work the formula backward to find the actual value that will be required to produce the estimated moving average.

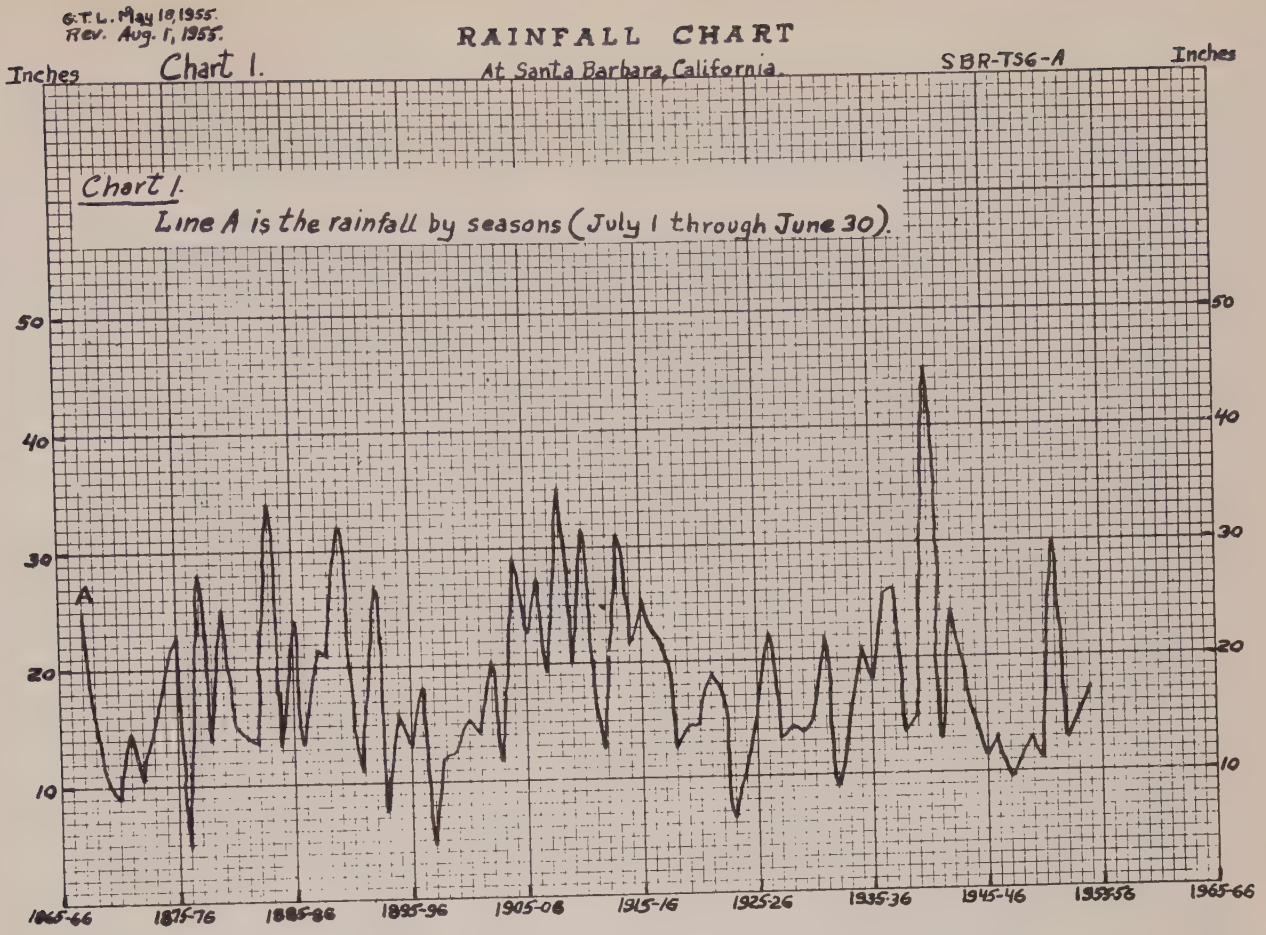
For 1958-59 for example, my guess is that the actual moving average for 1954-55 will be slightly less than 18.50 inches, or, for a best guess, about 18.40 inches.

To get this value would require 15.50 inches of rain in the 1958-59 season.

If the moving average should be 18.30 the season precipitation would be 13.10; if 18.50 it would be 17.90. It seems probable that the actual precipitation will be between these two values—say about 15.50 inches.

Such a method is of value only if short moving averages produce larger waves that are smooth and repetitive enough to allow a reasonable prediction of the next year.

4060 Sonriente Road
Santa Barbara, California



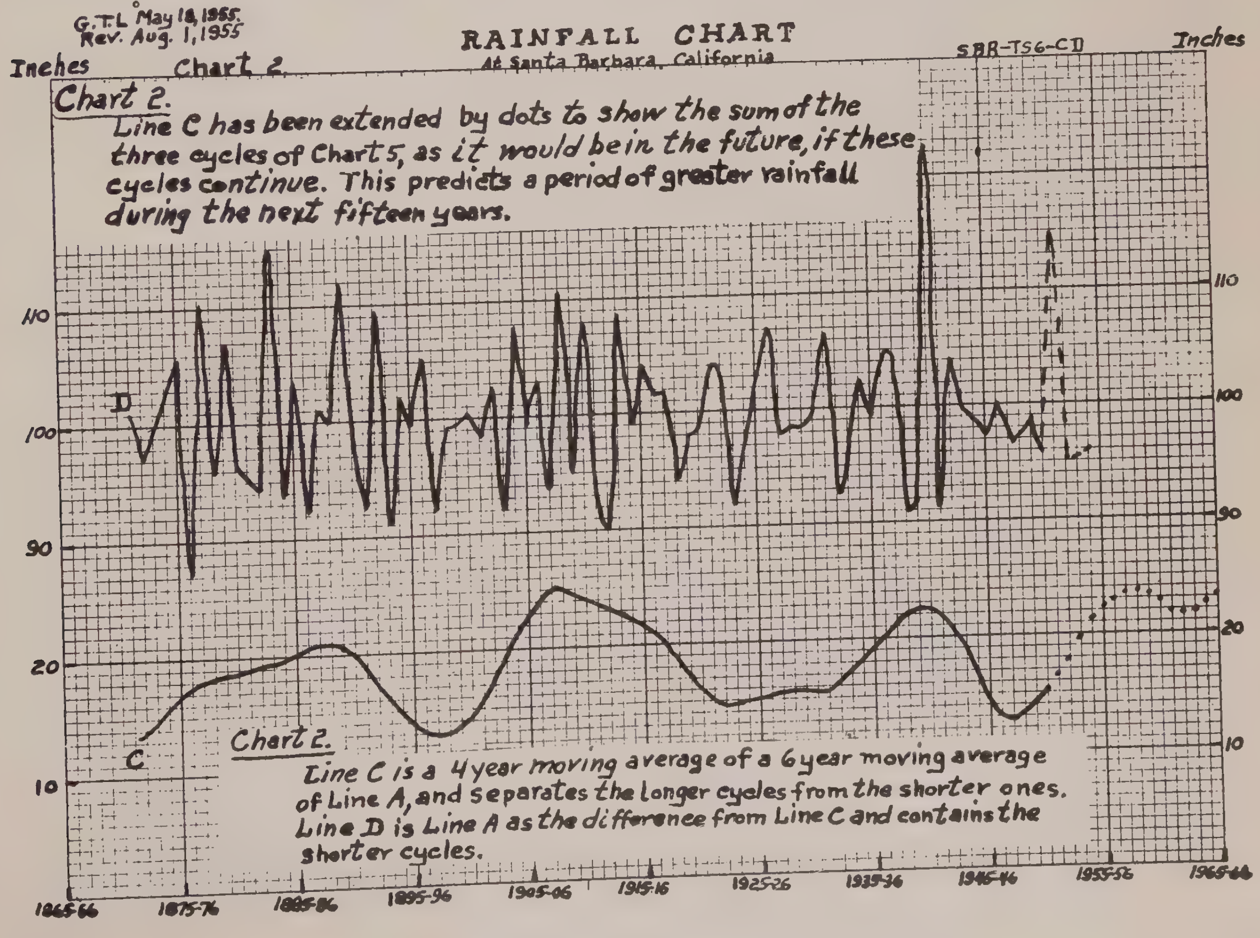
G.T.L. May 18, 1955.
Rev. Aug. 1, 1955.

RAINFALL CHART
At Santa Barbara, California.

Chart 1.

SBR-TS6-A

Chart 1.
Line A is the rainfall by seasons (July 1 through June 30).



G.T.L. May 18, 1955
Rev. Aug. 1, 1955

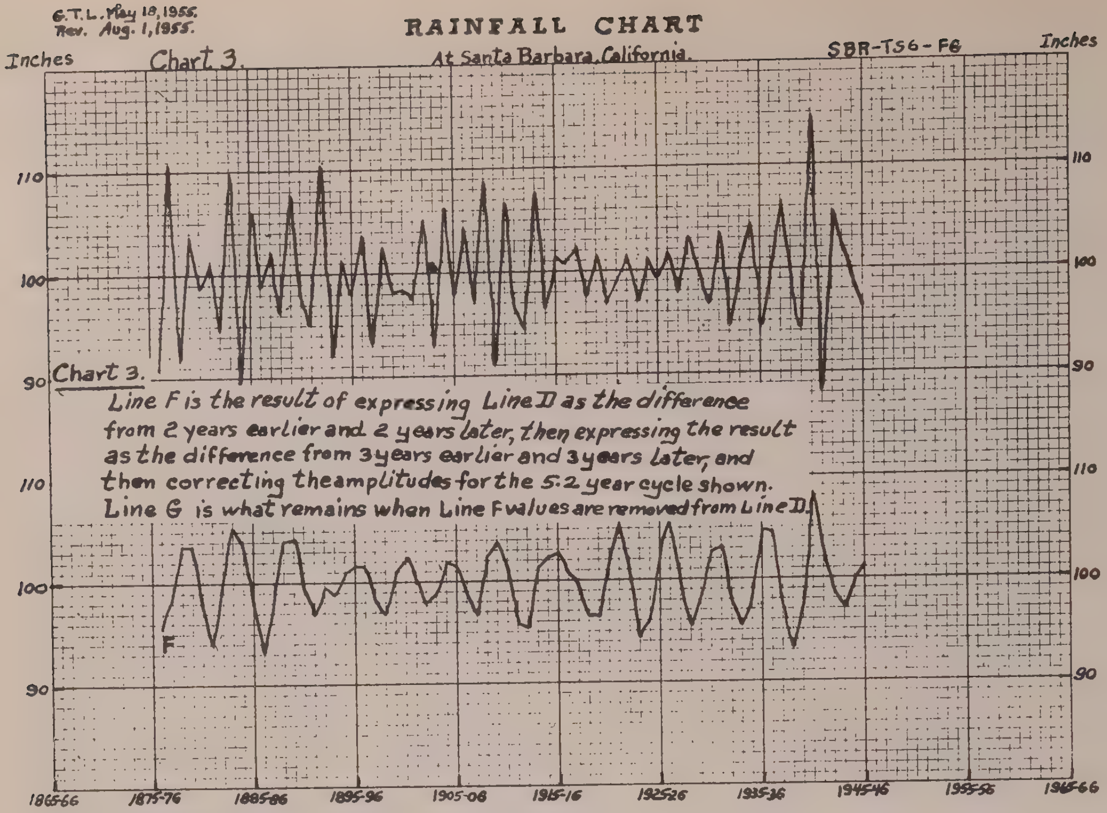
RAINFALL CHART
At Santa Barbara, California

Chart 2.

SBR-TS6-CD

Chart 2.
Line C has been extended by dots to show the sum of the three cycles of Chart 5, as it would be in the future, if these cycles continue. This predicts a period of greater rainfall during the next fifteen years.

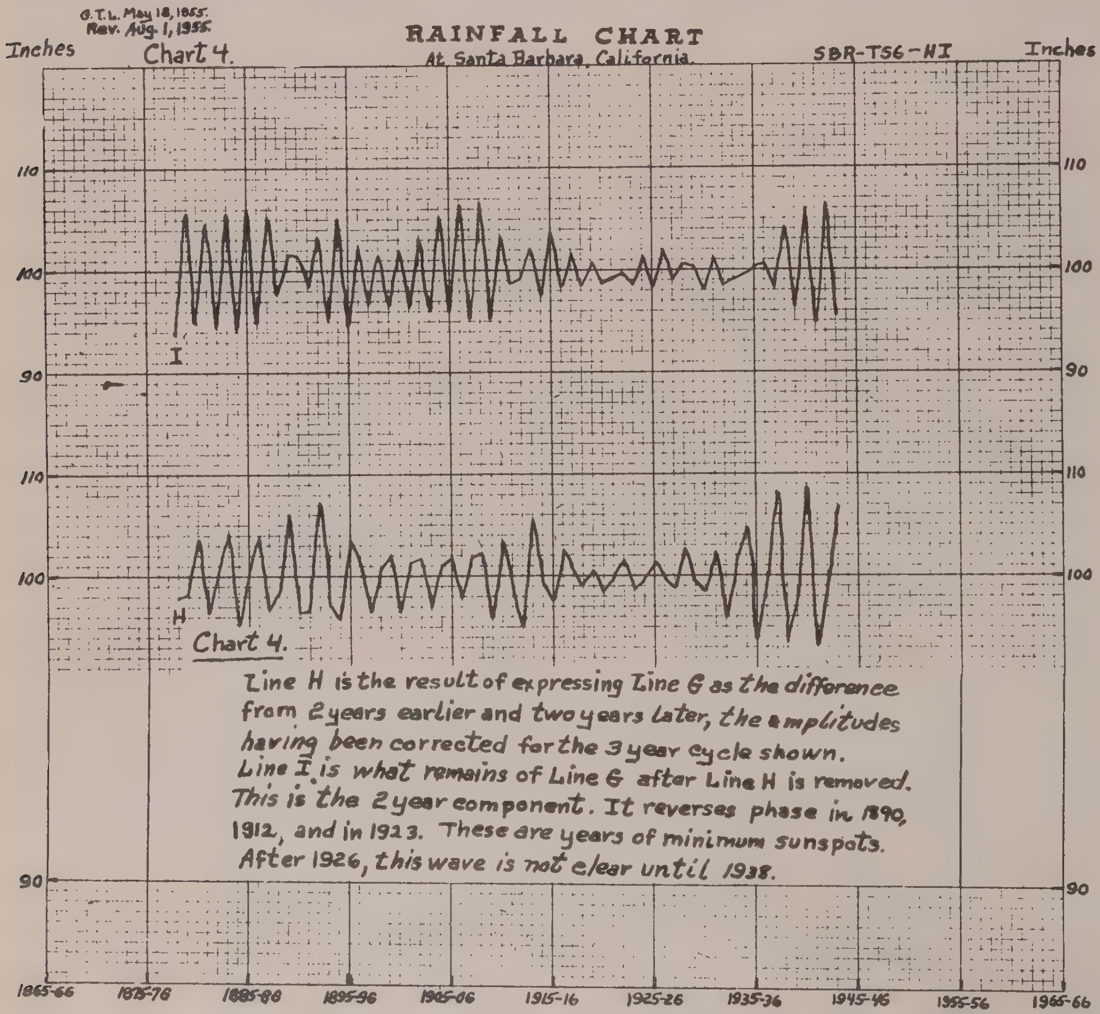
Chart 2.
Line C is a 4 year moving average of a 6 year moving average of Line A, and separates the longer cycles from the shorter ones. Line D is Line A as the difference from Line C and contains the shorter cycles.



G.T.L. May 18, 1955.
Rev. Aug. 1, 1955.

RAINFALL CHART
At Santa Barbara, California.
SBR-TS6-F6
Chart 3.

Chart 3.
Line F is the result of expressing Line D as the difference from 2 years earlier and 2 years later, then expressing the result as the difference from 3 years earlier and 3 years later, and then correcting the amplitudes for the 5.2 year cycle shown. Line G is what remains when Line F values are removed from Line D.



G.T.L. May 18, 1955.
Rev. Aug. 1, 1955.

RAINFALL CHART
At Santa Barbara, California.
SBR-TS6-HI
Chart 4.

Chart 4.
Line H is the result of expressing Line G as the difference from 2 years earlier and two years later, the amplitudes having been corrected for the 3 year cycle shown. Line I is what remains of Line G after Line H is removed. This is the 2 year component. It reverses phase in 1890, 1912, and in 1923. These are years of minimum sunspots. After 1926, this wave is not clear until 1938.

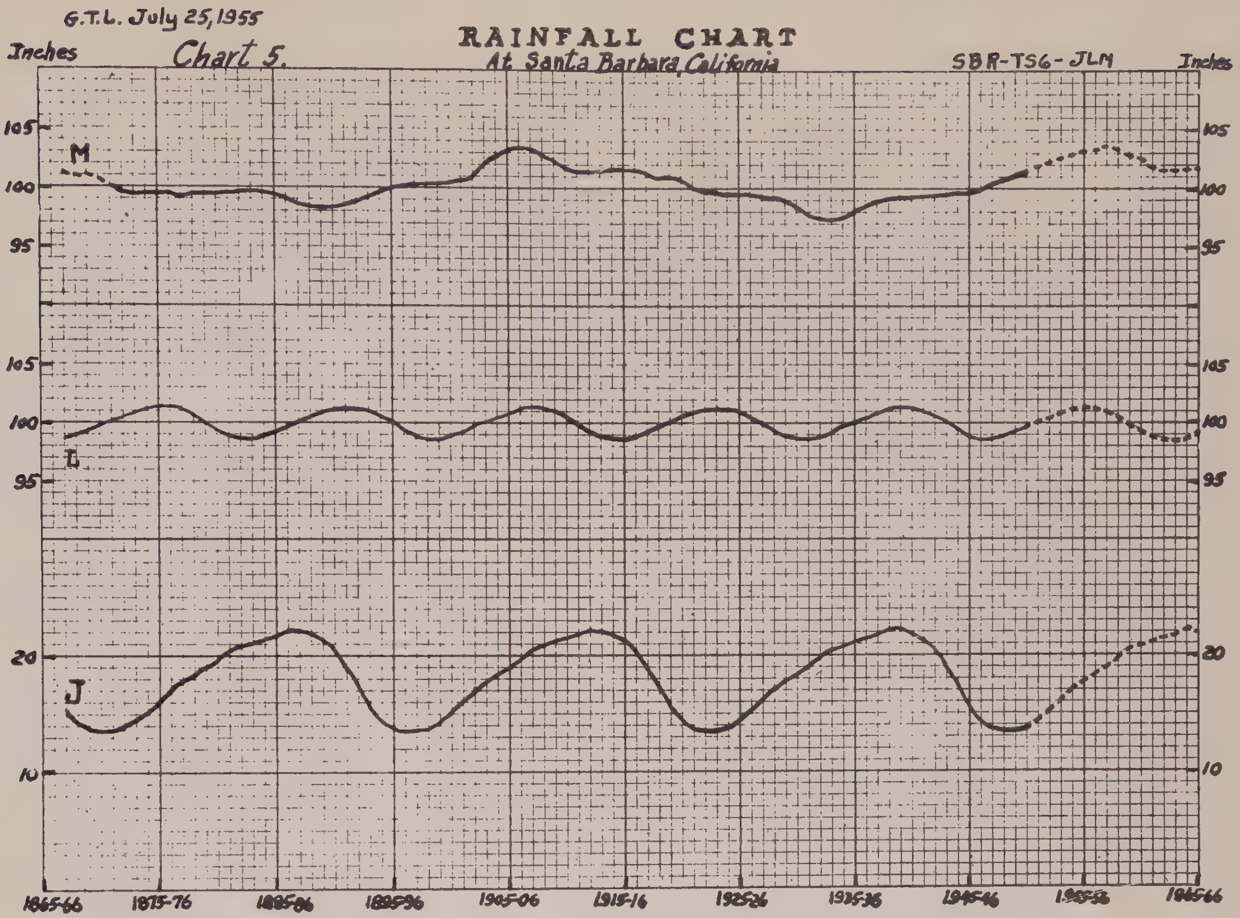


Chart 5.

This chart shows the 3 components of Line C of Chart 2. Line J is an average of the 3 waves of Line C and represents a 26 year cycle, that may be caused by the joint action of the 5.2 year cycle with the 1 year or seasonal cycle. Line L is the average of 5 waves, that are very clear after Line J is removed from Line C, and represents a 16 year cycle. Line M is what remains and is a 52 year wave, that appears to be repeating.

Letters to the Editor

STOCK MARKET CYCLES

Dear Mr. Dewey:

Why a projection to 1990? Ten to fifteen years should be long enough. I suppose your projection is formed in a way similar to the one constructed by Marechal in 1933. . .which was the best long-term one I have ever seen or heard of. . .

What happens if there is a major divergence between your projection and what actually occurs? Do you reconstruct your chart, or what?

Sincerely,
W. D. Lee

Chicago, Illinois

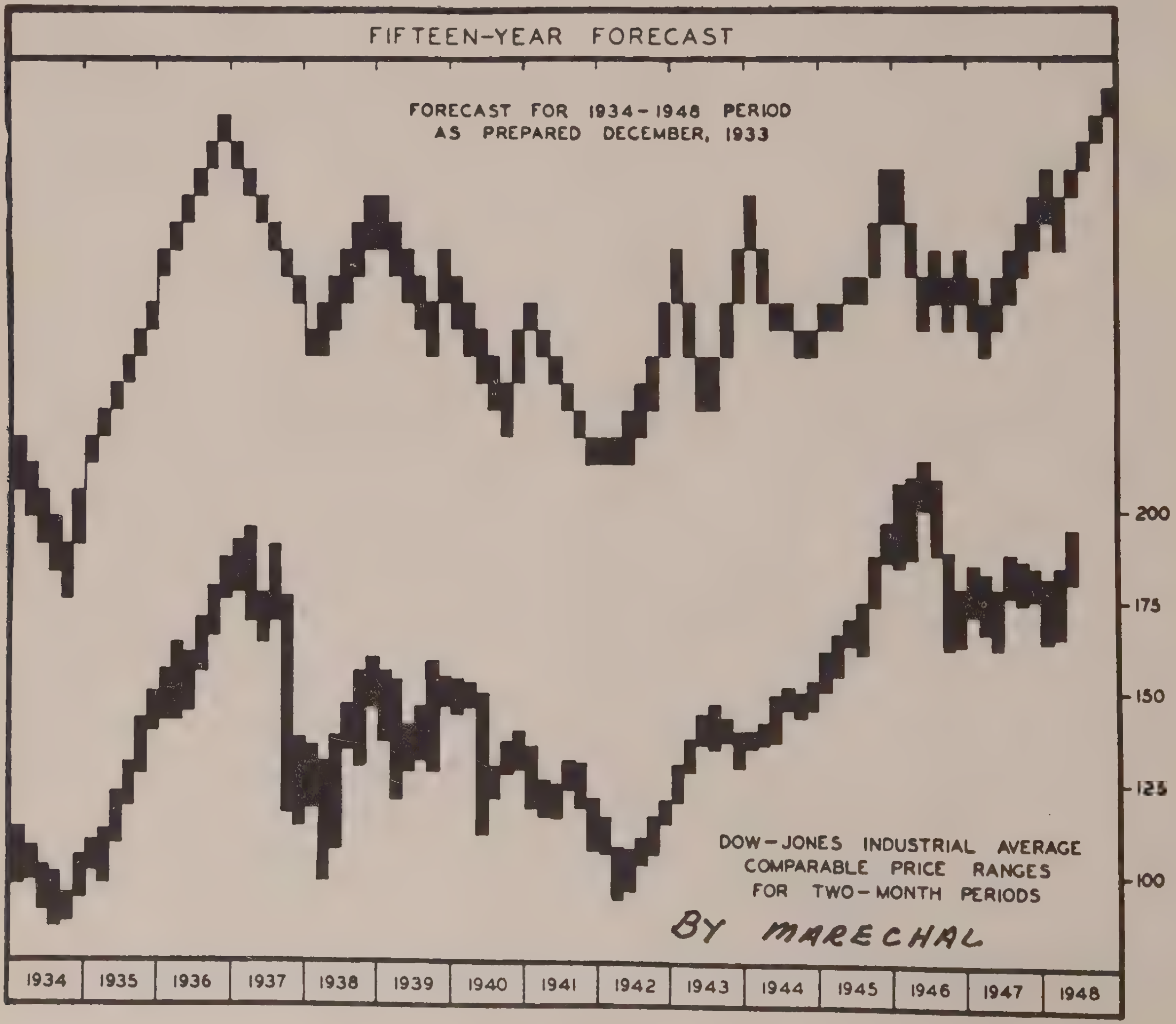
Comment:

I agree with you that Marechal's forecast of 1933, which is reproduced below, is the best one I have ever seen or heard of, but if it had been made to 1990, it would be still more impressive.

It is interesting to note that Marechal's forecast was described as a "record of the conclusions reached from a painstaking study of trend and resistance lines projected into the future, and taking into consideration past causes and effects, *all important cycles,* and tendencies of certain patterns of market movements to repeat themselves in new ways and at varying intervals of time." (Italics ours.)

In comparing any line that is projected into the future with current experience, what often looks like a bad distortion at a particular moment is sometimes seen to be merely incidental. This perspective is gained when one looks back at the broad sweep of things over a long period of time.

With additional figures, one can revise the cycle determination, but otherwise there is little one can do in the event of divergence.



Chapter Affairs

KANSAS CITY

Mr. J. H. Bruening, Mr. James R. Sullivan and Mr. Wayne E. Harding are planning an organizational meeting sometime in January as the first step in creating a Kansas City Chapter.

Also they are making plans for a meeting in March when Mr. Dewey will be in the city.

SAN FRANCISCO

Mr. Stanley Steer, Manager of the Commodities Department, Dean Witter & Co., San Francisco Office, spoke on Wednesday, December 10th on the use of cycles in forecasting commodity prices from a commodity trader's point of view. The presentation included charts of cyclic forecasts and coffee futures, prices and predictions which had been followed by commodity traders, with an overall record of results.

Mr. Steer will speak to the Chapter next year on cycles in cocoa futures.

The March meeting of the Chapter expects an address by the Director of the Foundation, Mr. Edward R. Dewey.

WASHINGTON, D. C.

The Washington Chapter held it's sixth consecutive monthly meeting on Friday, December 12 in the Community Room of the Washington Post Building.

The guest speaker was Ralph Stephenson Richard who is Director of the Washington Mutual Investor Funds.

Mr. Richard spoke on "Cycles in the Stock Market" and gave special emphasis to the market's likely near term course.

The next meeting of the Chapter is scheduled for the evening of January 9.

NEW YORK

November Meeting

The eleventh regular dinner-meeting of the New York Chapter of the Foundation was held on Wednesday evening, November 12.

Leonard W. Wing Addresses Meeting

In his talk, highlighted by the showing of several dozen slides, Dr. Wing spoke on what he termed "Newer Interpretations of Extra-Terrestrial Influences on Cyclic Events". He introduced the subject by explaining that he uses the term "cycle" to describe a movement having four definite attributes, namely, *wave-length, rhythm, amplitude,* and *timing*. According to Wing's definition, if any "cycle" lacks any one or more of these four attributes, it is not considered to be a true cycle.

Some New Thoughts on Cycles

At the outset of his talk, Dr. Wing dropped a gentle bombshell with his statement that "cycles in light rays from variable stars may well be related to cycles in terrestrial phenomena". However, he spent the bulk of his address in discussing his specialty, which is the phenomenon he terms "latitudinal passage of cycles". The latitudinal passage theory presumes that the epoch ot any cycle comes later and later, as that cycle is measured nearer and nearer the equator from either pole. This latitudinal passage phenomenon appears to be equally true of both the earth and the sun.

The Two Phenomena in Combination

According to Wing, waves apparently pass over the surface of the sun, and over the surface of the earth, simultaneously. This may explain why it is that so many of the well-known earth cycles appear to be tied fairly closely in length and timing to known sun cycles. Also, it provides one explanation for the often remarked fact that many of the waves we have on earth do not appear to be related in any manner to the two most important earthly phenomena—that is, the "earth clock" (based on the revolution of the earth on its axis) and the "earth calendar" (based on the revolution of the earth around the sun).

Cycles Stronger Farther North

Dr. Wing explained that his experience with cycles is that, in the northern hemisphere, a cycle's amplitude seems to be stronger the farther north the cycle is measured. Conversely, in the southern hemisphere, the amplitude appears to be higher the farther south one measures the cycle. If these seeming truths are factual, it then follows, Dr. Wing explained, that the amplitude of any cycle measured at the equator represents the weakest amplitude of that particular cycle.

Jack A. Dorland

The Cycle Round-up

FEBRUARY 1959

This month's Roundup gives special attention to the 54-year cycle in bond yields, the 9.3-year cycle in wheat prices, and the 12-month or seasonal cycle in unemployment.

The most recent figures for other series regularly reviewed in the Roundup are given in the table below.

THE DATA

We should point out that the figures we use are always the latest available. Some series may be as much as two months behind the calendar time, but the difference occurs because of the time involved in collecting and tabulating the information.

Most of the data we use are reported monthly in the *Survey of Current Business* which is published by the Department of Commerce. Many of the figures reported in the *Survey* are prepared by private organizations and this additional step in the process introduces more delay.

We are as current as is possible and always use the latest available figures.

THE PURPOSE

We use the latest figures because the purpose of this section is to check the current behavior of the various cycles.

The Roundup enables us to follow the extent to which the cycles we have previously reported about are or are not continuing to dominate.

In some cases monthly figures are very important because the cycles in question are short monthly cycles. Unemployment and oats prices are examples.

In other cases the cycles are long yearly cycles and the individual monthly figures are not as useful.

For instance, in this issue we bring the chart of the 9.3-year cycle in wheat prices up to date with monthly figures. The ideal 9.3-year cycle is now going down toward a low.

When we compare this yearly cycle with monthly figures we must keep in mind that the months will wiggle around considerably. What we must look for in the monthly line is the general direction in which it is moving.

The question is whether the line is drifting upward or downward. If the line is drifting in the same direction as the cycle, then we can assume that the cycle is operating.

G. S.

Series	Unit	1958 Month	Amount
Aluminum Production	Thousand tons	Sept.	124.7
		Oct.	137.4
Automobile Factory Sales	Thousand cars	Sept.	103
		Oct.	272
		Nov.	515p
Copper Prices—Electrolytic, New York	Cents per pound	Oct.	27.31
		Nov.	28.67
Corn Prices—#3 yellow, Chicago	Cents per bushel	Oct.	114.9
		Nov.	111.7
		Dec.	119.0p
Liabilities of Business Failures	Millions dollars	Oct.	47.3
		Nov.	56.7
Oats Prices—#3 white, Chicago	Cents per bushel	Oct.	61.2
		Nov.	No quotation
Residential Building Contracts	Million dollars	Sept.	1,460
		Oct.	1,595
Stock Prices—Standard & Poor's Combined Index	1941-43 = 10	Oct.	50.95
		Nov.	52.54p
		Dec.	Not available
Sunspot Numbers	Numbers	Sept.	201
		Oct.	173
		Nov.	142

WHEAT PRICES

The most important of the cycles that appear to influence the price of wheat is one 9.3 years long.

This 9.3-year cycle is now on the way down to a bottom which is due to come ideally at February, 1960.

The broken line on the chart below diagrams the ideal cycle after it has been combined with trend. As with any ideal cycle, this line represents the average of past experience.

Past experience in this case is the period 1859-60 through 1956-57. Over this time the price of wheat has been lowest, with respect to trend, at 9.3-year intervals spaced so that the next period of low prices should center about the early part of 1960.

We do not like to call this a forecast because we do not expect that wheat prices in the future will match precisely the extension of the average past performance of the 9.3-year cycle.

There are many factors, including other cycles, which will also affect the price of wheat.

Nevertheless it is possible to find out to what extent we can rely on the 9.3-year cycle by checking the extent to which it has dominated in the past.

The following table gives the actual price of wheat at the times of ideal high and low, the turning points of the 9.3-year cycle. It covers the entire period studied.

Ideal Turning Points	Actual Price	Price Decline
Feb. 1867 Low	189.4	
Oct. 1871 High	118.1	
Jan. 1876 Low	105.1	13.0
Feb. 1881 High	97.8	
Oct. 1885 Low	87.3	10.5
May 1890 High	94.3	
Jan. 1895 Low	52.9	41.4
Sept. 1899 High	72.4	
May 1904 Low	96.3	-23.9
Jan. 1909 High	105.5	
Aug. 1913 Low	87.6	17.9
Apr. 1918 High	224.1	
Dec. 1922 Low	124.8	99.3
Aug. 1927 High	138.8	
Apr. 1932 Low	58.9	79.9
Nov. 1936 High	123.3	
July 1941 Low	100.0	23.3
Mar. 1946 High	177.0	
Nov. 1950 Low	244.6	-67.6
July 1955 High	267.8	

The prices and declines are given in cents per bushel.

The decline column shows what actually happened to the price of wheat during each down-leg of the 9.3-year cycle since 1859.

Seven out of nine times the actual price of wheat has gone down during the ideal decline.

The odds are thus 7 to 2 that the actual price of wheat at the next ideal low will be below the price at the last ideal high, if the cycle continues.

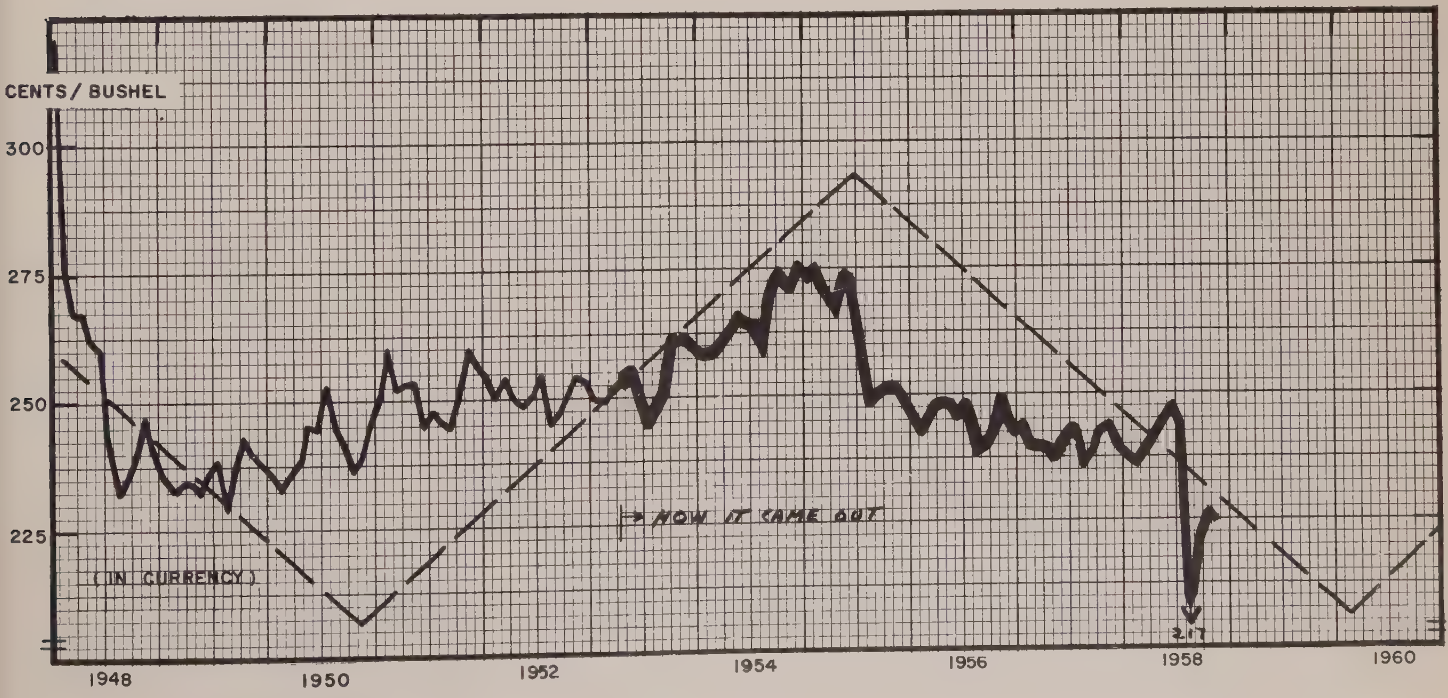
This study was based on No. 1 Dark Northern Spring Wheat at Minneapolis.

Annual averages were used in the work, but it is possible to follow current prices with monthly figures.

The solid line on the chart below diagrams the average monthly price, and the recent figures are:

Month	Cents/Bushel
1958 - July	243.2
August	217.2
September	221.8
October	226.6
November	225.0

See also "What's Ahead For Wheat Prices" in the September, 1957 issue of *Cycles*. *G. S.*



BOND YIELDS

There is evident on any annual chart of bond yields a 54-year cycle. This cycle is going up at the present time. If it continues to dominate the picture in the future as it has in the past, bond yields should work upwards (gradually and irregularly) until about 1978.

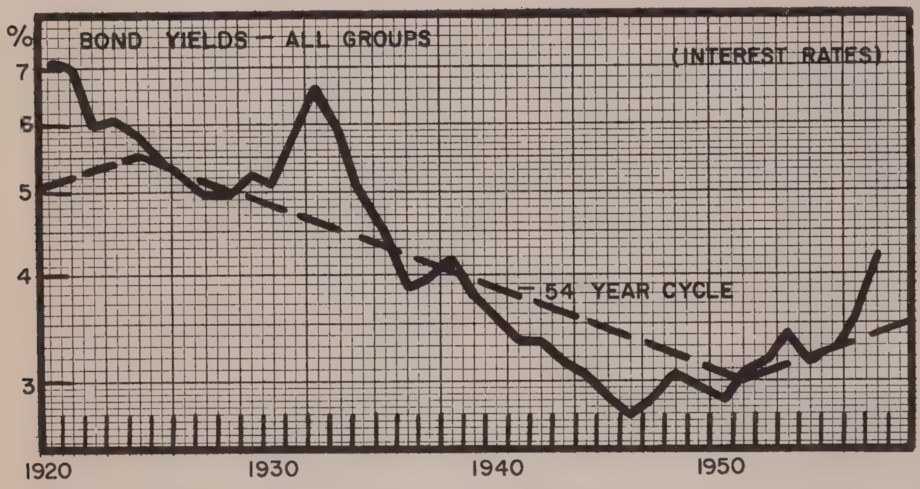
The bond yield figures used on the chart below are for all domestic corporations as prepared and published by Moody's. Recent monthly figures are:

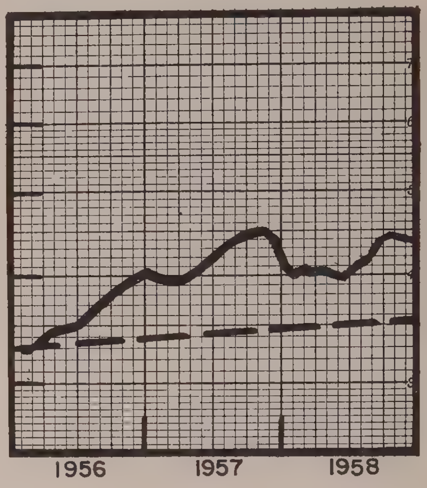
1958 -	Oct.	4.42
	Nov.	4.40
	Dec.	4.38p

This cycle is apparent also in the various groups (rails, utilities, industrials), and in the various ratings (Aaa, etc.).

When this cycle turned up in 1899, most prominent financiers were taken by surprise, but of course at that time no one had told them of this cycle. Regarding the recent turn, they were put on notice 20 years in advance.

A low in this cycle was due ideally in 1951 and it should not surprise anyone that bond yields have been climbing gradually upwards for the past several years.





This 54-year cycle is often called the Kondratieff cycle after its discoverer. N. D. Kondratieff first wrote about this cycle in 1926. It has been coming true ever since.

The series he used and the wave as he outlined it are given on the chart below.

The timing of the cycle used in the chart above of bond yields in the United States is an extension of the timing used by Kondratieff in the chart below.

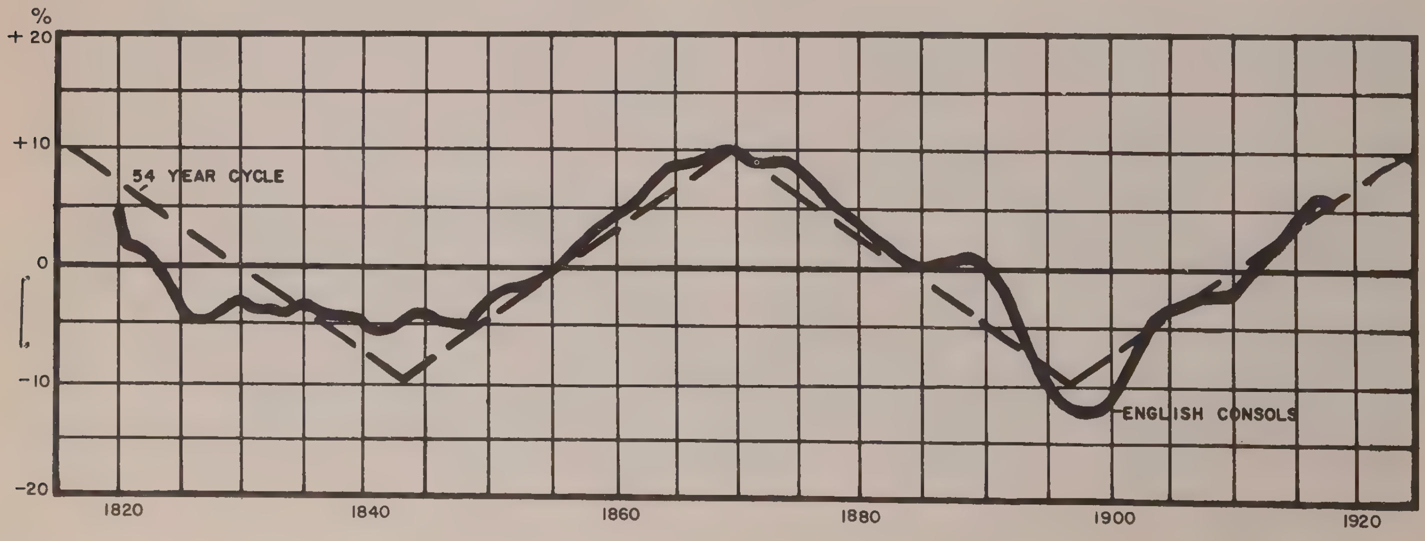
Evidently the cycle is as applicable in the United States as in Great Britain.

The 54-year cycle is also present in other series of figures. For instance, it is present in wheat prices in England back to 1260. All the evidence points to this being a real cycle.

On this basis, it is reasonable to assume that, despite a certain amount of jumping around, interest rates will climb gradually over the next two decades.

For full details regarding the 54-year cycle in bond yields, see the article "What's Ahead for Interest Rates?" by E. R. Dewey in the October, 1957 issue of *Cycles*.

G. S.



UNEMPLOYMENT

In the months since our last report on the seasonal cycle in unemployment the reading of this particular economic barometer has changed from bad to good.

You may remember that we used the percentage of the civilian labor force that was unemployed as our measure, and that we compared the *typical* seasonal month-to-month change with the *actual* month-to-month change of our measure.

This comparison is shown in the table in columns B and D.

Column A gives the seasonal cycle in terms of the percentage of trend for any month when trend is reduced to 100%.

Column B gives the change that can be expected from month-to-month from the seasonal cycle alone. That is, typically, the percentage of the labor force which is unemployed increases from January to February by 5%.

In 1958, as shown by column D, unemployment actually increased by 15% from January to February. Since of the 15%, only 5% was because of the season, the other 10% was due to the recession.

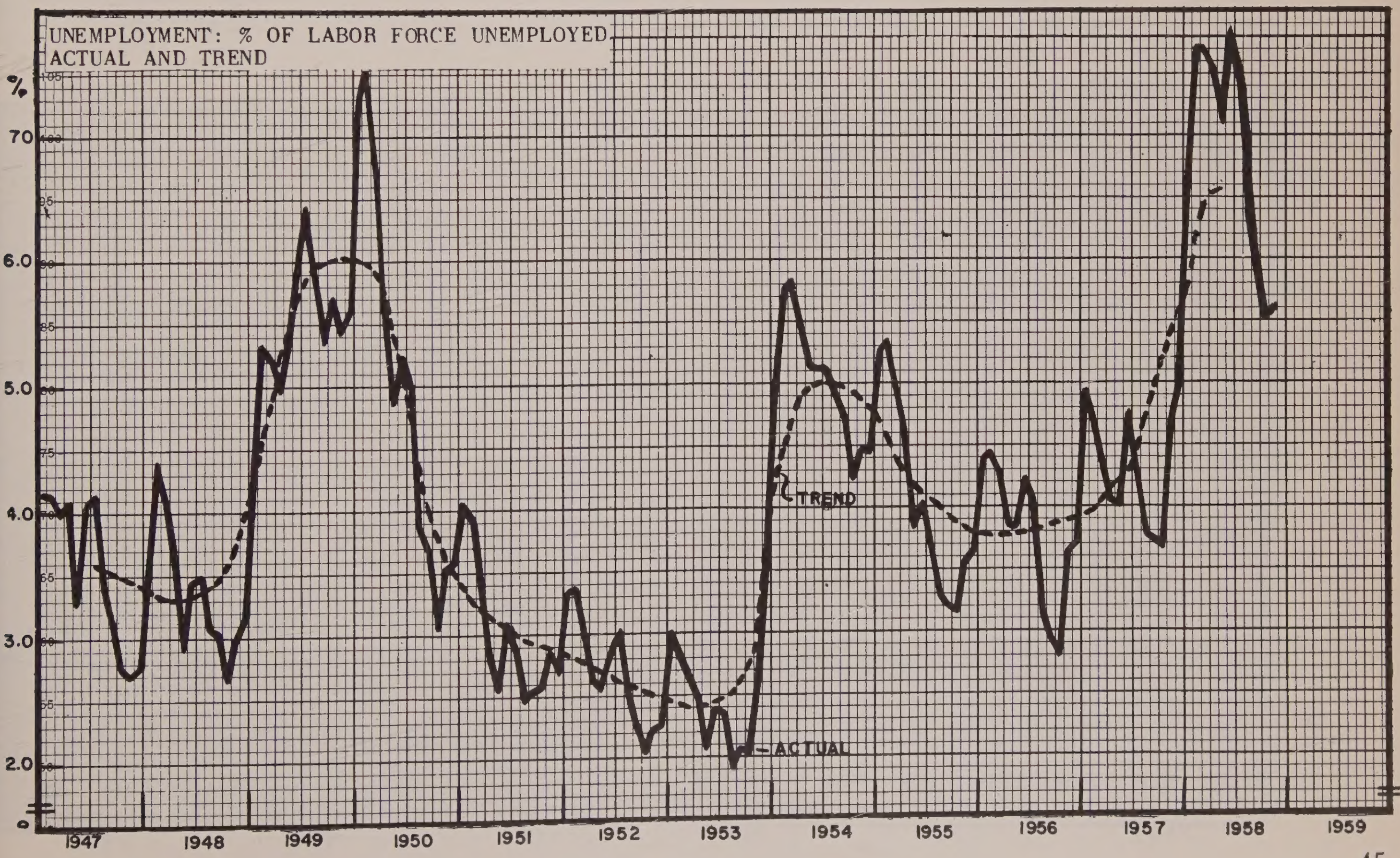
The economic situation, as measured by unemployment, continued poor into July. However, from July to August the situation changed. Here, although unemployment was due to go down by 4%, the actual reduction amounted to 11%. Thus, 7% of the 11% decrease in unemployment was due to general economic improvement.

At the present time, we can expect that there will be an increase in the percentage unemployed. It is typical of this season.

This increase in unemployment is not in itself a bad sign. It becomes a bad sign when, and only when, the increase in unemployment is greater than would normally be expected.

G. S.

	A	B	C	D
Month	Typical Unemployment % of Trend	Typical Monthly Change	1958 Actual Per Cent Unemployed	Actual Monthly Change
Jan.	117		6.70	
Feb.	123	+ 5%	7.70	+15%
Mar.	114	- 7	7.70	0
Apr.	103	-10	7.53	- 2
May	94	- 9	7.11	- 6
June	106	+13	7.86	+11
July	95	-10	7.51	--4
Aug.	91	- 4	6.71	-11
Sept.	88	- 3	5.98	-11
Oct.	82	- 7	5.51	- 8
Nov.	92	+12	5.60	+ 2
Dec.	95	+ 3		



The Geisinger Indicator

FORECAST

In November the Federal Reserve Board's Index of Industrial Production, seasonally adjusted, went up to a value of 141. This level of physical production was almost 12% above the low of last April. This is a remarkably quick and strong recovery.

The Geisinger Indicator for August (April 1959 when projected) reached +5.2. The rise in this indicator has been so strong that we can begin to expect some hesitation. Although the important sign to watch for is when the Geisinger Indicator hits -2.0, a turn-over at the top will come first. When it comes it will give reason for some caution.

The First Difference Indicator moved sideways, staying at the level of +1.50. This means that the *rate* of increase in production was unchanged.

The Modified Geisinger Indicator for August (April 1959 when projected) went up to +7.37. This indicator appears to be forming a top. It has probably reached the high point of the current rise. This statement applies to this indicator only; not to the Index of Industrial Production, which will doubtless go higher.

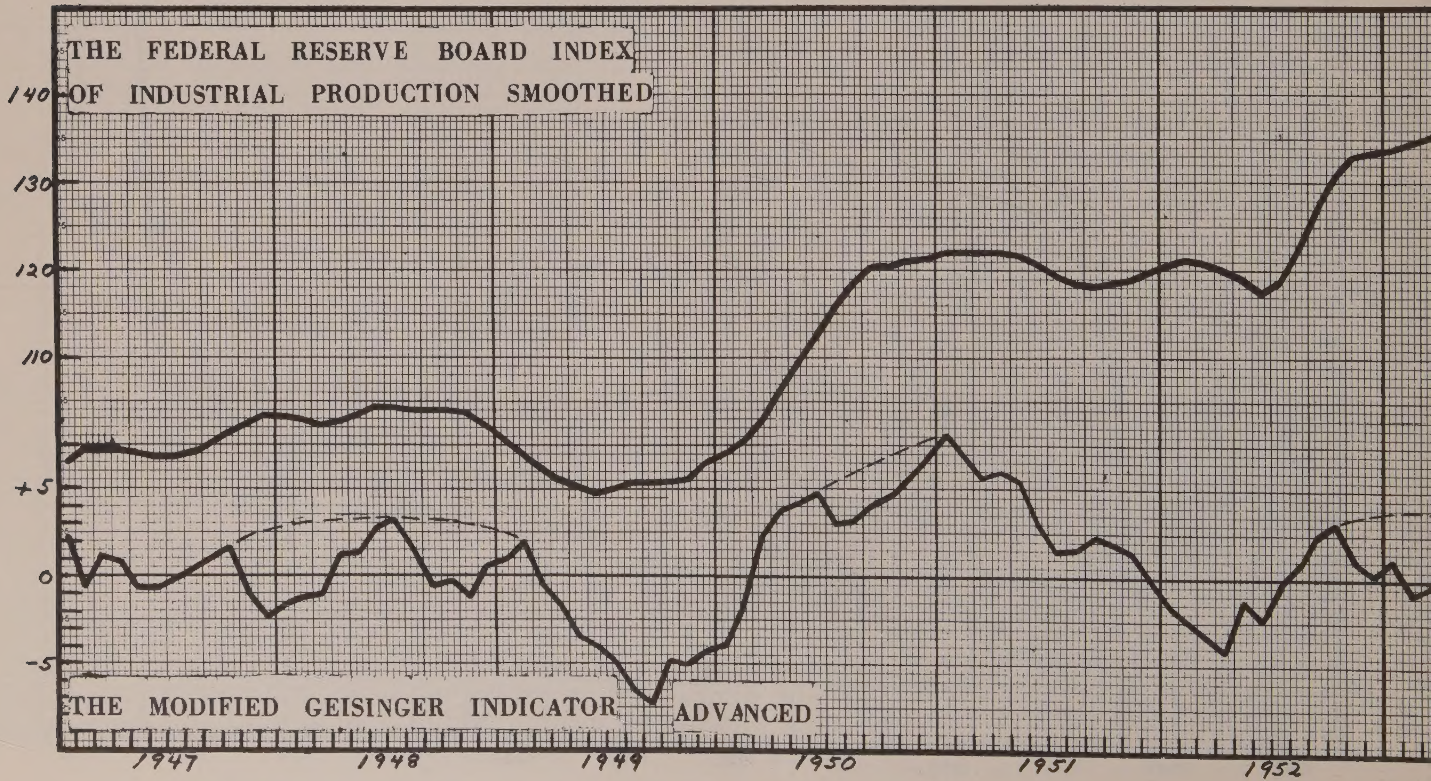
Although there is no reason to expect an early turn in the *Index of Production*, the first signs of hesitation are appearing in our Advanced Indicator. We expect some hesitation in the climb of the rate of increase in production. The optimism we have been expressing in recent months will probably soon change to a note of caution, although the current level of production seems to have a firm base.

Business is good. It will doubtless get better. But way off on the horizon there is a little cloud that needs to be watched!

December 24, 1959 *E. R. Dewey*

Month	1 F.R.B. Index	2 Geisinger Indicator	3 First Difference Indicator	4 Modified Geisinger Indicator	Timing Advanced 8 Months
Mar. 1958	128	-1.0	-2.33	-3.33	Nov. 1958
Apr.	126	-0.4	-1.50	-1.90	Dec. 1958
May	128	+3.0	+0.33	+3.33	Jan. 1959
June	132	+3.8	+2.00	+5.80	Feb. 1959
July	134	+4.6	+2.67	+7.27	Mar. 1959
Aug.	136	+5.2	+2.17	+7.37	Apr. 1959
Sep.	137	*	+1.50	*	May 1959
Oct.	138	*	+1.50p	*	June 1959
Nov.	141p		*	*	July 1959

p - preliminary * - not yet available



BACKGROUND

Explanation

The Modified Geisinger Indicator is a series of numbers which, in the past, have usually gone up and down ahead of corresponding movements of the Federal Reserve Board Index of Industrial Production. The Modified Geisinger Indicator thus throws some light on the probabilities of the future.

The Modified Geisinger Indicator is the sum of two Indicators, the Geisinger Indicator and The First Difference Indicator.

The Geisinger Indicator was invented by Robert Geisinger. It is derived from figures which are published each month in the *Survey of Current Business*. (See Col. 2 of the table.)

The First Difference Indicator, is merely the amount by which the smoothed F. R. B. Index is above or below the value for the preceding month. It registers the *rate* of advance or decline. It has some forecasting value, too. (See Col. 3 of the table.)

The sum of these two Indicators makes the *Modified* Geisinger Indicator. See Col. 4 of the Table. It is advanced by eight months and plotted as the bottom line of the chart.

The F. R. B. Index of Industrial Production measures physical production in the U. S. A. It is a weighted average of tons, yards, gallons, and numbers of things produced each month. See (Col. 1 of the Table.)

The smoothed values of the F. R. B. Index of Industrial Production are plotted below as the top line on the chart. The smoothing is effected by means of a centered 3-month moving average posted to the second position. The latest actual monthly Index of Production is recorded by a dot.

Industrial Production has *nothing* to do with stocks.

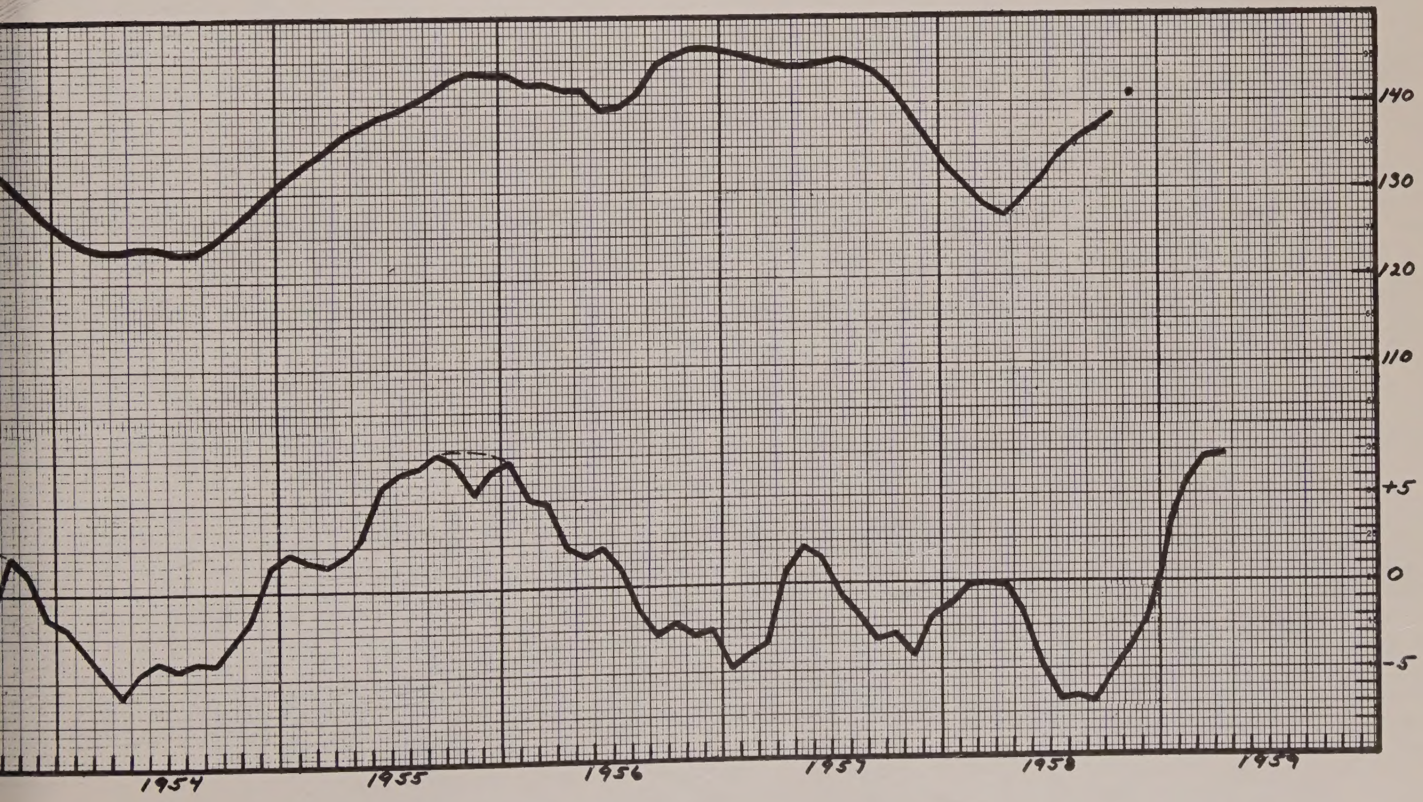
Interpretation

In the past, when the *Geisinger* Indicator (Col. 2), going up, has cut +2, good business has followed; when, going down, it has cut -2, bad business has followed.

The important *turns* of the *Geisinger* Indicator (Col. 2) and the *Modified* Geisinger Indicator (Col. 4) often come about 8 or 9 months before the corresponding turns of the Index of Industrial Production. This fact gives some idea of what is around the corner. To help you to grope your way into tomorrow the Modified Geisinger Indicator is advanced 8 months. Where *it* is now, Industrial Production may soon be.

The degree to which the two curves (Industrial Production and the Modified Geisinger Indicator advanced by 8 months) correspond can be seen by inspection of the chart.

The correspondence between the two lines on the chart is general rather than specific. It is not to be expected that every little wiggle in the Modified Geisinger Indicator is significant. It is rather the broad sweep of the line which is to be watched. The dashed lines which are added show the manner in which the eye should follow the Indicator.



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